



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/767,459	01/23/2001	Masami Aizawa	F-6842	2130
7590 02/26/2004			EXAMINER	
Jordan and Hamburg LLP 122 East 42nd Street New York, NY 10168			NGUYEN, TRAN N	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/767,459		AIZAWA ET AL.	
	Examiner		Art Unit	
	Tran N. Nguyen		2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 05 May 2002 and 23 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 26, 28, 30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 26,28,30 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ___ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 23 September 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant request to withdrawn the Final Official Action dated 11/6/02 is hereby granted because the Summary of Office Action did not check the box that indicates the Office Action is final. Giving this reason, the applicant request is granted. However, *the Applicant's Counsel is advised that the Summary of Office Action form is as it is "A SUMMARY". The Detail Final Office Action of 11/6/02 does state that the Action is FINAL.*

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action: A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 26 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Matsumura et al (US 4088909)** in view of **Yamagami et al (JP 4-11-283817A)**, and **Derwent abstract of CN 1125351 A**, Pub-date 6/26/1996 (hereafter CN'351) or **Swift et al (US 5843567)**.

Matsumura discloses a motor comprising: a stator (12) and a rotor assembly (11) having a rotor permanent magnet (21), which is shown to have a substantial doughnut, shaped body. **Matsumura** substantially discloses the claimed invention, except for the limitations of the following: *rotor made of SmFeN with resin binder, wherein the size not greater than 10 micro-meter.*

Yamagami, however, teaches a resin-bonded-SmFeN-molded magnet. **Yamagami** teaches that the resin-bonded-SmFeN-molded magnet would have high heat resistance, superior size stability, high mechanical strength and superior magnetic characteristics. Furthermore, those skilled in the art would know that there always should exist a small air gap between the rotor and the stator, particularly for a miniature motor such as timepiece motor, resin-bonded-

Art Unit: 2834

SmFeN-powder molded magnet would enable precision in the rotor's dimension to ensure a sufficient air gap therebetween.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the Matsumura's motor by employing a resin bonded SmFeN magnet, as taught by Yamagami, as the Matsumura's rotor magnet. Doing in so would provide the motor with a rotor magnet with high heat resistance; superior size stability, high mechanical strength and superior magnetic characteristics resulting in improve reliability and performance of the motor.

Regarding the size of the megnetic powder particle of a size not greater than 10 micrometers and uniformly densely packed, CN'351, however, specifically teaches SmFeN magnetic powder having particles of a size from 0.3 to 10 micrometers. Alternately, Swift also teaches magnet powder having suitable particlesize from 1 nanometer to 10 micrometers. CN'351 or Swift teaches that the small size magnet particle of no greater than 10 micrometers. This small particle magnet powder would enable the uniform and dense packing characteristic so that the permanent magnet powder material to obtain a stablized magnetism.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the motor by selecting the SmFeN powder material that having particle size to be from aobut 0.3-10 micrometers, as taught by CN'351 or from 1 nanometer to 10 micrometers, as taught by Swift, for fabricating the resin bonded SmFeN molded permanent magnet. Doing so would provide the cylindrical-shaped molded body with the SmFeN powder particles having uniform and dense packing characteristic so that the molded body of permanent magnet powder material would have a stablized magnetism.

2. **Claims 30 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Matsumura, Yamagami** and (CN'351 or Swift), and further in view of **Takahashi (US 5580400)** and **Takagi (JP 361186402)** .

The combination of **Matsumura, Yamagami and (CN'351 or Swift)** refs discloses the claimed invention, except for the limitations recited in claims 30 and 31.

Takahashi teaches a resin-bonded-magnet-powder molded magnet can be improved in the quality and stabilized against effects of atmospheric oxygen and humidity by forming coating layer of phosphate on the surface, particularly aluminum phosphate coating. **Takahashi**

Art Unit: 2834

specifically teaches that the phosphate coating not only can prevent oxidation of the iron powder but also enhance magnetic properties of the produced permanent magnet (col 1 line 50+). Furthermore, **Takagi** also teaches to incorporate materials such as iron hydrogenphosphate for coating at a specific ratio into iron powder in order to provide ferrous powder for a sintered magnetic material having excellent magnetic characteristics as sintered material for an iron core of an electric apparatus such as motor.

Hence, it would have been obvious to an artisan to apply this essential teachings to provide an entire outer surface of the rotor magnet with a coat of a phosphate coating, particularly the phosphate coating is an iron-hydrogenphosphate coating for preventing the magnet from being rusted. This creates an advantage of excellent bonding between the iron in the magnet and the phosphate coating to eliminate the unstable iron, which is thought to be the cause of oxidation in the magnet. The adhering characteristic of the aluminum phosphate coating permits the coating material to adhesively cover the unstable iron in the magnet, and the excellent impenetrable characteristic of the aluminum phosphate coating enable the corrosion resistance for the magnet.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the motor's rotor magnet by providing a layer of aluminum phosphate wherein it is an iron-hydrogenphosphate coating, as taught by Takahashi and Takagi, on the surface of the magnet. Doing so would not only improve the reliability of the rotor magnet as the result of resistance against oxidation effects of atmospheric oxygen and humidity, but also enhance magnetic characteristic of the magnet.

As stated at the beginning of this Office Action, Applicant's reason for requesting withdraw final office action, on 11/6/02, with respect to Claims 26, 28, 30-31 have been considered. The previous Final Rejection has been withdrawn.

As shown by the record, Claims 26, 28 are amended and claims 30-31 is newly added by amendment filed on 5/5/03. **Thus, even though this is a new ground(s) of rejection, this Office Action is made final because the Applicant's amendment, on 5/5/02, necessitates the new ground(s) of rejection presented in this Office action.**

Accordingly, Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See

Art Unit: 2834

MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

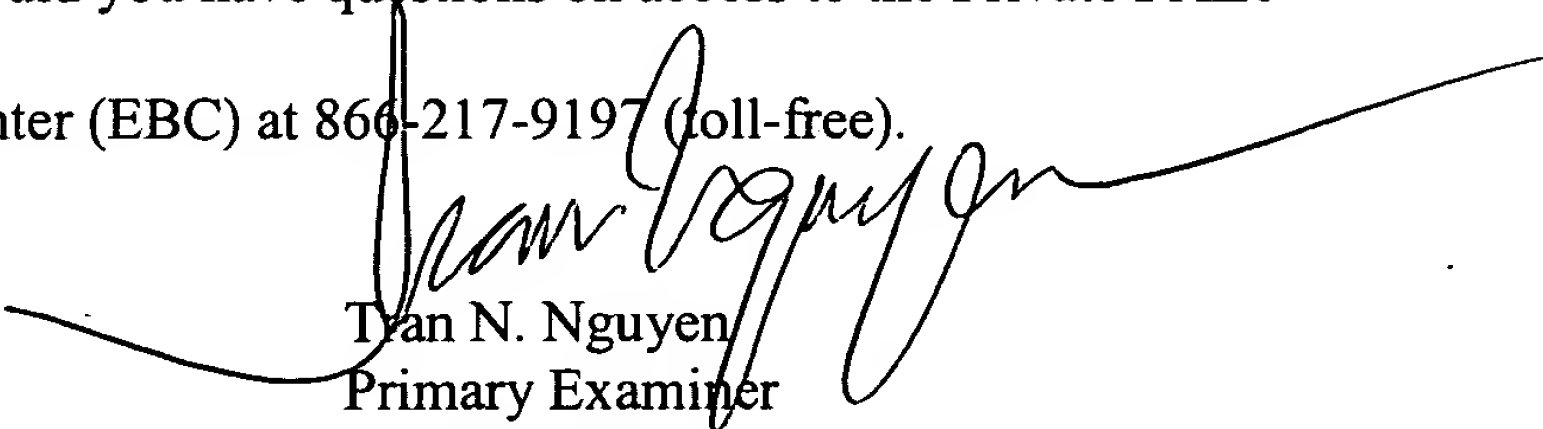
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N. Nguyen whose telephone number is (571) 272-2030. The examiner can normally be reached on M-F 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Burton Mullins can be reached on (571)-272-2029.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Tran N. Nguyen
Primary Examiner
Art Unit 2834